Relevant Educational Standards

Information Literacy Standards for Student Learning

(American Association of School Librarians, Association for Educational Communications and Technology)

- The student who is information literate uses information accurately and creatively.
- The student who is an independent learner is information literate and pursues information related to personal interests.
- The student who is an independent learner is information literate and appreciates literature and other creative expressions of information.
- The student who contributes positively to the learning community and society is information literate and recognizes the importance of information to a democratic society.

English Language Arts Standards

(National Council of Teachers of English)

- Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
- Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
- Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

National Science Education Standards

- **Science as inquiry:** Students develop understandings about scientific inquiry that
  a) scientific investigations involve asking and answering questions and comparing the answer with what scientists already know about the world;
  b) different kinds of questions suggest different kinds of scientific investigation;
  c) mathematics is essential in scientific inquiry; and
  d) scientists make the results of their investigations public so that others can repeat the investigation, and review and ask questions about results of other scientists' work.
- **Science and Technology:** Students develop understandings about science and technology that:
  a) tools help scientists make better observations, measurements, and equipment for investigations;
  b) people have always had questions about their world and science is one way of answering questions and explaining the natural world;
  c) creativity, imagination, and a good knowledge base are all required in the work of science and engineering; and
  d) many different people in different cultures have made and continue to make contributions to science and technology.
- **Science in Personal and Social Perspective:** Students develop understandings that
  a) selection of food and eating patters determine nutritional balance; and
  b) progress in science and technology can be affected by social issues and challenges.
- **History and Nature of Science:** Students develop understandings of science as a human endeavor and the history of science where:
  a) scientists are influenced by societal, cultural and personal beliefs and ways of viewing the world; and science is not separated, but a part of society.
  b) In history, diverse cultures have contributed scientific knowledge and technological inventions.

Exhibition Program K-12 Resources on the Web

www.nlm.nih.gov/hmd/about/exhibition/index.html

National Library of Medicine

National Institutes of Health
Building 38
8600 Rockville Pike
Bethesda, MD 20894

NLM Exhibition Program: K-12 Resources

The Exhibition Program at the National Library of Medicine (NLM) supports public education about science, medicine, technology and history. Its exhibition web sites listed below offer rich and multidisciplinary resources for K-12 teachers and students. Suggested grade levels are noted with each web site. Also relevant educational standards are listed on the front page.

1. ***Visible Proofs: Forensic Views of the Body*** (www.nlm.nih.gov/visibleproofs/)
   Grade Levels: 6-12+
   Description: The *Visible Proofs* web site presents rich collection of images and stories about the history and the development of forensic field. The Education and Resources sections offer K-12 online activities, lesson plans, and bibliographies.

2. ***Frankenstein: Penetrating the Secrets of Nature*** (www.nlm.nih.gov/hmd/frankenstein/frankhome.html)
   Grade Levels: 9-12
   Description: The *Frankenstein* web site encourages audiences to examine the intent of Mary Shelley's novel, *Frankenstein*, and to discuss Shelley's and their own views about personal and societal responsibility as it relates to science and other areas of life. The online exhibition explores the historical context of Shelley's work and how the ideas, thoughts and fears of her time still endure in ours.

3. ***Emotions and Disease*** (www.nlm.nih.gov/hmd/emotions/emotionshome.html)
   Grade Levels: 11-12
   Description: This exhibition incorporates historical approach and primary source materials to convey the complex relationships between scientific theories, popular ideas, and their cultural context. Using images and text, the exhibition shows our efforts to understand though time any relationship between the body and mind.

4. ***Breath of Life*** (www.nlm.nih.gov/hmd/breath/breathhome.html)
   Grade Levels: 9-12 (whole site)
   Grade Levels 3-8: (Research & Interactive)
   Description: The online exhibition, *Breath of Life* examines the medical and human history of asthma. In addition to providing a historical perspective, the exhibition offers practical resources to help answer the questions such as "What is asthma?" "Who has asthma and why?" "Can it be managed, prevented, or cured?" and "How do people cope with asthma?"

5. ***The Once and Future Web: Worlds Woven by the Telegraph and Internet***
   (www.nlm.nih.gov/onceandfutureweb/)
   Grade Levels: 7-12
   Description: *The Once and Future Web* presents the parallel history of the telegraph and the Internet. Various audiovisual materials such as artifact photos, audio recordings and videos serve as engaging primary source materials for students to research and understand the historical, technological, and social context in which the telegraph and the Internet developed and flourished.

6. ***Dream Anatomy* and its *Learning Station***
   (www.nlm.nih.gov/exhibition/dreamanatomy/index.html)
   Grade Levels: 6-12
   Description: This exhibition presents a rich collection of images reflecting the anatomical imagination from 1500 to the present. This web site provides a "Learning Station" where you can find lesson plans and activities designed especially for educators and students at the 6-12 grade levels.

7. ***Changing the Face of Medicine: Celebrating America's Women Physicians***
   (www.nlm.nih.gov/changingthefaceofmedicine/)
   Grade Levels: 1-12
   Description: The *Changing the Face of Medicine* web site highlights the lives and work of more than 300 women physicians, from the 19th century to the present day. The online exhibition provides a searchable database of the women physicians in the exhibition, films of select women, online activities and lesson plans, as well as career resources.

Other NLM Online Resources

1. ***Profiles in Science***
   (www.profiles.nlm.nih.gov)
   Grade Levels: 9-12
   Description: This online archive features the collections of prominent biomedical scientists of the 20th century. *Profiles* offers digital access to primary source materials such as laboratory notes, correspondence, newspaper clippings, photographs, oral histories, and unpublished manuscripts. These items provide insight into the scientists' lives and careers.

2. ***Images from History of Medicine***
   (wwwihm.nlm.nih.gov)
   Grade Levels: 5-12
   Description: This database of images provides access to nearly 60,000 images in the prints and photograph collection of the NLM History of Medicine Division. The collection includes portraits, maps, pictures of institutions, caricatures, genre scenes, and graphic art in a variety of media illustrating the social and historical aspects of medicine.

3. ***Turning the Pages Online*** (archive.nlm.nih.gov/proj/ttp/books.htm)
   Grade Levels: 3-12
   Description: This online interactive brings ancient books to life, allowing you to "turn the pages" of books with the click of a mouse. Using a zoom feature, you can take a close look at the illustrations and text as if you are looking at the book itself!

4. ***Tox Town*** (www.toxtown.nlm.nih.gov)
   Grade Levels: 9-12
   Description: *Tox Town* is an interactive guide to commonly encountered toxic substances. It provides: 1) everyday locations where toxic chemicals might be found; 2) how the environment can affect human health; and 3) links to authoritative chemical information and environmental health resources on the Internet.